

SECTION 13

ENVIRONMENTAL PROTECTION

13-1. General.

a. As the Corps of Engineers role expands into the area of hazardous and toxic waste cleanup, chemical demilitarization projects, EPA superfund projects and other environmentally sensitive projects, the resident engineers responsibilities toward protecting the environment becomes much broader than those typically found on our normal construction sites. The resident engineer and his staff must recognize the potential pitfalls of performing construction or remedial work in environmentally sensitive areas. Further guidance in implementing this type of work is available from various HQUSACE and local regulations which are referenced herein.

b. In addition to the special type projects noted above, our typical construction projects may also present potential areas where environmental damage is likely. As a result, the resident engineer should review proposed construction projects to determine common potential sources of environmental degradation during construction activities. Special and technical environmental protection clauses of the contract documents must be examined to understand all special environmental pollution controls, to ensure compliance to the maximum extent practicable, and to ensure that environmental controls established during the planning phase are implemented.

13-2. Environmental Restoration Project Management.

a. The Superfund Management Guide, EP 1110-2-6, provides the general guidance on USACE management of the EPA Superfund program. Although overall program guidance, policy, and funding for Corps support originates with the EPA, the USACE and EPA interagency agreement (IAG) provides that USACE manage "Superfund Federal Lead Fund Financed" design and construction contracts, manage remedial investigations and/or feasibility studies upon EPA request, and provide technical assistance to EPA in support of remedial cleanup of hazardous waste sites. FOA Construction Divisions/Districts are responsible for administration of Superfund construction projects within their Superfund assigned areas.

b. The Construction District, as the Government's on-site representative, is responsible for assuring that

specific project operations stated in the contract specifications are performed satisfactorily and that appropriate documentation of daily tasks is compiled. Many of these projects will be the subject of Justice Department legal action against the party responsible for the contamination, and detailed records are required. Documents include reports sufficient to develop a chronological record of site activities and to prepare documents suitable for community relations activities, e.g. contractor daily reports, change orders, problems regarding compliance with environmental and contractual requirements, laboratory and monitoring data, etc.

c. Manifest System - The Manifest System is the "Cradle-To-Grave" system of control of the transport of all hazardous toxic waste materials. A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest that tracks the hazardous waste to its final destination. All generators who ship HTW, transporters, and facilities that receive HTW must use the Manifest System. This is the fourth key step in the regulatory process which controls the shipment of HTW.

d. Site specific technical support will be provided by MRD on a reimburseable basis, as the lead Division and design center of expertise for this program. This may include developing site specific quality management and safety plans. The Site Specific Quality Management Plan (SSQMP) and other QM documents are detailed in ER 1110-1-263. The Site Specific Safety Plan (SSSP) and the Accident Prevention Plan are detailed in ER 385-1-92.

13-3. Air Pollution.

a. The resident engineer is alert to operations and procedures which cause air pollution and is able to determine if Federal, state, and local standards are being followed.

b. Some common construction operations which are usually scrutinized for air pollution are as follows:

- (1) Quarry drilling and rock crushing.
- (2) Clearing, grubbing, and stripping.
- (3) Excavation and embankment.
- (4) Cement and aggregate handling at mixing sites.

- (5) Cement or lime in soil stabilization.
- (6) Blasting.
- (7) Haul road construction and maintenance.
- (8) Sandblasting and shotcrete.

c. Smoke, fumes, and sprays which may cause air pollution include the following:

- (1) Volatiles from asphalt and cutback materials.
- (2) Fumes from heaters during winter operations.
- (3) Burning cleared growth and scrap material.
- (4) Smoke from asphalt/coal tar heaters.
- (5) Paints.
- (6) Herbicides and insecticides.

13-4. Water Pollution.

a. Water pollution in construction operations occurs through spillage, waste of materials, and erosion. Carefully considered construction methods and material handling can eliminate most potential water pollution. Water quality standards to be met at the specific project site should be included in the specifications. Water pollution is controlled principally by diking to contain spillages, by settling basins to reduce suspended solids in runoff, and by seeding or sodding surfaces for erosion control.

b. Contractors must provide safeguards and use construction techniques that will protect the environment from accidental spillage of materials, which eventually are carried to water courses by storm runoff. Some common sources of such pollution are as follows:

- (1) Waste from floating plant (fuel, oil, grease, etc)
- (2) Treatment and disposal of drill cuttings and waste water from drilling and grouting operations.
- (3) Sterilization products, (water tanks or lines)
- (4) Concrete operations:

- (a) Aggregate washing and cooling.
- (b) Cement and concrete spillage.
- (c) Water curing and form-release compounds.
- (d) Lift cleanup and preparation.
- (e) Spillage and waste of curing compounds.
- (f) Waste from equipment washing.
- (5) Vehicle maintenance:
 - (a) Fuel spillage.
 - (b) Crankcase drainage.

c. Contractors must consider confining silt laden waters in dredging operations to areas of dredging and controlling the spread of contaminated waters from the site.

13-5. Land Pollution.

Landscape defacement is the most permanent of all the forms of despoilment by construction activities. When a tree is needlessly removed or damaged, repair or replacement takes years. When earth is removed in the wrong place, the environment is marred. Common land despoilment actions during construction operations include destruction of land forms and vegetation and pollution of the land by spillage and waste.

a. Destruction of land forms and vegetation. Disposal of material in waste or spoil disposal areas should be controlled. The location, layout, and restoration after abandoning roads, camps, shops and work areas should be covered in the specifications and drawings. Visual protection for surrounding or nearby residential areas from the work and storage areas should be accomplished by screening with effective plantings, fencing, or a combination of the two. Work areas, particularly in urban locations, should be confined to that specifically needed.

b. Pollution of land by spillage and waste. Laxity in the contractors' housekeeping activities, which contributes to spillage and waste, can be controlled by enforcing safety regulations. However, the specifications should cover those items known to be difficult to control by specifying specific safety regulations that must be implemented.

13-6. **Noise Pollution.**

This category of pollution includes a wide range of causes, from faulty mufflers on equipment to uncontrolled use of explosives. Noise pollution is a serious concern in urban areas. The project should be reviewed for possible noise pollution problems and appropriate protective measures should be implemented to eliminate or substantially reduce them. The resident engineer should stay abreast of regulations concerning noise pollution.